

REMARKS

In the Office Action mailed November 18, 2002, the Examiner rejected Claims 1-6, 8-15, and 18-21 under 35 U.S.C. § 102(b) as anticipated by Smith et al. (U.S. Patent No. 5,613,861) ("Smith"). To the extent that the rejection applies to the amended claims, Applicants respectfully traverse the rejection.

Applicants respectfully submit that amended Claim 1 recites the limitations of a first element material and a second different element material, where upon transformation of the second element material, a geometric shape of an interconnection element is modified. Applicants respectfully submit that Smith does not teach or suggest the desirability of the interconnection element as recited in Applicants' independent Claim 1.

Applicants respectfully submit that the spring contacts 15 of Smith are described as formed of an elastic conductive material, although they can be formed as a non-conductive or semi-conductive material if they are coated or plated with conductor material. (Smith, col. 4, lines 40-45.) Applicants respectfully submit that Smith does not teach or suggest the desirability of "such that upon transformation of the second element material a geometric shape of the interconnection element is modified," as recited in Applicants' independent Claim 1. Smith teaches, "Likewise, if a uniform stress gradient $\Delta\sigma/h$ is introduced into the flat metal strip, the metal strip will bend into an arc shape." (Smith, col. 5, lines 6-9). The Examiner relies on this stress gradient apparently as the transformable property. Smith teaches that a stress gradient is introduced into the spring contact 15, but Smith does not enable the introduction of the stress gradient into the spring contact 15.

Independent claim 1 is not anticipated by Smith because Smith does not teach a material having a transformable property. Smith teaches a material having a stress gradient or a number of different stresses in material layers of the same material. The material itself is not described as having a transformable property that brings about an arc shape. In other words, Smith does not say that the stresses in material layers are

transformed to cause the structure to adopt an arc shape. The material (including the different stresses) is not transformed.

Applicants speculate that the Examiner's focus on material stress in Smith as a transformable property may be a result of Smith's failure to enable the introduction of a stress gradient in the described structure.

Applicants respectfully submit that, "A claimed invention cannot be anticipated by a prior art reference if the allegedly anticipatory disclosures cited as prior art are not enabled. Long ago our predecessor court recognized that a non-enabled disclosure cannot be anticipatory (because it is not truly prior art) if that disclosure fails to 'enable one of skill in the art to reduce the disclosed invention to practice.'" (Amgen, Inc. v. Hoechst Marion Roussel, Inc., 314 F.3d 313 at 1354, U.S. Court of Appeals for the Federal Circuit, Docket No. 01-1191 (Fed.Cir., 2003).)

Applicants respectfully submit that since Smith does not teach or suggest the desirability of the recited limitations in Claim 1, and may not be enabling for the elastic spring contact having a stress gradient that it does teach, Claim 1 is not anticipated by Smith. Applicants respectfully request that the Examiner withdraw the rejection to independent Claim 1. Applicants respectfully submit that dependent Claims 2-6, 8-15, and 18-21 are allowable for at least the same reasons as allowable independent Claim 1 from which they depend, and Applicants respectfully request that the Examiner withdraw the rejection to Claims 2-6, 8-15, and 18-21 .

The Examiner noted that, with regard to Claim 4, Smith discloses a transformable property such that a first volume is transformed to a second different volume. Applicants are unable to find such teaching in Smith.

The Examiner noted that, with respect to Claims 6 and 20, Smith discloses a transformation resulting from exposure to heat, citing col. 6, lines 36-39. The cited reference refers to the deposition of depositing metal layer 16, not transforming a geometric shape of spring contact 15.

In the Office Action, the Examiner rejected Claim 7 under 35 U.S.C. § 103(a) as being unpatentable over Smith. To the extent that the rejection applies to the amended claim, Applicants respectfully traverse the rejection.

In the Office Action, the Examiner stated that, "It would have been obvious to one having ordinary skill in the art at the time the invention was made to discover the claimed quantitative characteristics of the transformability volume and percent of spring material in the interconnection element." Applicants respectfully submit that Smith does not teach or suggest the desirability of the limitations as recited in Claim 7, and that the Examiner is basing the rejection on facts within the Examiner's personal knowledge. Applicants respectfully request that the Examiner file an affidavit pursuant to 37 C.F.R. § 1.104(d)(2) supporting the Examiner's personal knowledge.

In the Office Action, the Examiner rejected Claims 12 and 13 under 35 U.S.C. § 103(a) as being unpatentable over Smith in view of Eldridge et al. (U.S. Patent No. 5,832,601) ("Eldridge"). To the extent the rejection applies to the amended claims, Applicants respectfully traverse the rejection.

Applicants respectfully submit that Eldridge does not remedy the defects of Smith discussed above regarding Claim 1, and Applicants also respectfully submit that there is no motivation or suggestion to combine Eldridge with Smith to remedy the defects of Smith.

Applicants respectfully request that the Examiner withdraw the rejection to Claims 12 and 13.

In the Office Action, the Examiner rejected Claims 16-17, 22-28, 30-32, 35, 38-44, 46, 48-51, 55-59, 61-63, 66, and 69-79 under 35 U.S.C. § 103(a) as being unpatentable over Smith in view of Faraci et al. (U.S. Patent No. 5,810,609) ("Faraci"). To the extent that the rejection applies to the amended claims, Applicants respectfully traverse the rejection.

Regarding independent Claim 22, Applicants respectfully submit that Claim 22 recites the limitations of a first element material, a second different element material, such that upon transformation of the second element material, a shape of an

interconnection element is modified. Applicants respectfully submit that Faraci does not remedy the defects of Smith discussed above regarding Claim 1, as Smith fails to teach or suggest the desirability of one or more of the elements found in Applicants' independent Claims 1 and 22. Specifically, Smith fails to teach or suggest the desirability of a material transformation, so that a shape of an interconnection element is modified. Applicants respectfully submit that Faraci does not remedy the defects of Smith discussed above, and that there is no motivation or suggestion to combine Faraci with Smith to remedy the defects of Smith.

Applicants respectfully request that the Examiner withdraw the rejection to independent Claim 22. Applicants respectfully submit that Claims 23-28, 30-32, 35, 38-44, and 46 are allowable for at least the same reasons as allowable independent Claim 22, discussed above, from which they depend. Applicants respectfully request that the Examiner withdraw the rejection to Claims 23-28, 30-32, 35, 38-44, and 46.

Applicants respectfully request that the Examiner withdraw the rejection to Claims 16-17, as Faraci does not remedy the defects of Smith discussed above regarding independent allowable Claim 1, from which Claims 16-17 depend.

Regarding Claim 48, Applicants respectfully submit that Claim 48 recites the limitations of a first element material, a second different element material, such that upon transformation, a geometric shape of an interconnection element is modified. Applicants respectfully submit that Faraci does not remedy the defects of Smith as discussed above regarding Claims 1 and 22.

Applicants respectfully request that the Examiner withdraw the rejection to Claim 48. Applicants respectfully submit that Claims 49-51, 55-59, 61-63, 66, and 69-75 are allowable for at least the same reasons as allowable independent Claim 48 from which they depend, and Applicants respectfully request that the Examiner withdraw the rejection to those claims.

Regarding Claim 76, Applicants respectfully submit that Claim 76 recites the limitations of a first element material, a second different element material, such that upon transformation, a shape of the interconnection element if modified.

Applicants respectfully submit that Faraci does not remedy the defects of Smith as discussed above regarding Claims 1, 22, and 48.

Applicants respectfully request that the Examiner withdraw the rejection to Claim 76. Applicants respectfully submit that dependent Claims 77-79 are allowable for at least the same reasons as allowable Claim 76 from which they depend, and Applicants respectfully request that the Examiner withdraw the rejection to those claims.

In the Office Action, the Examiner rejected Claims 33 and 64 under 35 U.S.C. § 103(a) as being unpatentable over Smith in view of Eldridge. To the extent that the rejection applies to the amended claims, Applicants respectfully traverse the rejection.

Regarding Claim 33, Applicants respectfully submit that Eldridge does not remedy the defects of Smith discussed above regarding Claim 22. Applicants respectfully request that the Examiner withdraw the rejection to Claim 33.

Regarding Claim 64, Applicants respectfully submit that Eldridge does not remedy the defects of Smith discussed above regarding Claim 48. Applicants respectfully request that the Examiner withdraw the rejection to Claim 64.

In the Office Action, the Examiner rejected Claims 29, 34, 60, and 65 under 35 U.S.C. § 103(a) as being unpatentable over Smith in view of Faraci. To the extent that the rejection applies to the amended claims, Applicants respectfully traverse the rejection.

Regarding Claims 29 and 34, Applicants respectfully submit that Faraci does not remedy the defects of Smith discussed above regarding Claim 22. Applicants respectfully request that the Examiner withdraw the rejection to Claims 29 and 34.

Regarding Claims 60 and 65, Applicants respectfully submit that Faraci does not remedy the defects of Smith discussed above regarding Claim 48. Applicants respectfully request that the Examiner withdraw the rejection to Claims 60 and 65.

In the Office Action, the Examiner rejected Claims 34, 36, 47, 52-54, 65, 67, and 80-82 under 35 U.S.C. § 103(a) as being unpatentable over Smith in view of Faraci and further in view of Dozier II et al. (U.S. Patent No. 5,772,451) ("Dozier"). To the extent that the rejection applies to the amended claims, Applicants respectfully traverse the rejection.

Regarding Claims 34, 36, and 47, Applicants respectfully submit that Faraci and Dozier do not remedy the defects of Smith discussed above regarding Claim 22. In addition, Applicants respectfully submit that there is no motivation or suggestion to combine Faraci and Dozier with Smith to remedy the defects of Smith. Applicants respectfully request that the Examiner withdraw the rejection to Claims 34, 36, and 47.

Regarding Claims 52-54, 65, and 67, Applicants respectfully submit that Faraci and Dozier do not remedy the defects of Smith discussed above regarding Claim 48, and that there is no motivation or suggestion to combine Faraci and Dozier with Smith to remedy the defects of Smith. Applicants respectfully request that the Examiner withdraw the rejection to Claims 52-54, 65, and 67.

Regarding Claims 80-82, Applicants respectfully submit that Faraci and Dozier do not remedy the defects of Smith, discussed above regarding Claim 76, and that there is no motivation or suggestion to combine Faraci and Dozier with Smith to remedy the defects of Smith. Applicants respectfully request that the Examiner withdraw the rejection to Claims 80-82.

In the Office Action, the Examiner rejected Claim 45 under 35 U.S.C. § 103(a) as being unpatentable over Smith in view of Faraci and further in view of Khandros et al. (U.S. Patent No. 5,994,152) ("Khandros"). To the extent that the rejection applies to the amended claim, Applicants respectfully traverse the rejection.

Applicants respectfully submit that Faraci and Khandros do not remedy the defects of Smith discussed above regarding Claim 22. Also, Applicants respectfully submit that there is no motivation or suggestion to combine Faraci and Khandros with Smith, to remedy the defects of Smith. Applicants respectfully request that the Examiner withdraw the rejection of Claim 45.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attachment is captioned "VERSION WITH MARKINGS TO SHOW CHANGES MADE."

CONCLUSION

In view of the foregoing, it is believed that all claims now pending (1) are in proper form, (2) are neither obvious nor anticipated by the relied upon art of record, and (3) are in condition for allowance. A Notice of Allowance is earnestly solicited at the earliest possible date. If the Patent Office believes that a telephone conference would be useful in moving the application forward to allowance, the Patent Office is encouraged to contact the undersigned at (310) 207-3800.

If necessary, the Commissioner is hereby authorized in this, concurrent and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2666 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17, particularly, extension of time fees.

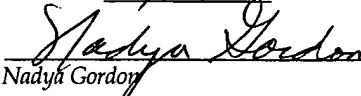
Respectfully submitted,
BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP

Dated: 2/18/03



William E. Hickman, Reg. No. 46,771

12400 Wilshire Blvd.
Seventh Floor
Los Angeles, California 90025
(310) 207-3800

CERTIFICATE OF MAILING:
I hereby certify that this correspondence is being deposited as First Class Mail with the United States Postal Service in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231 on 2/18/03
 2/18/03
Nadya Gordon Date

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS

The claims are amended as follows.

1. (Twice Amended) An interconnection element comprising:
a first element material adapted to be coupled to a substrate; and
a second different element material coupled to the first element material,
wherein one of the first element material and the second element material comprises a material having a transformable property such that upon transformation, a geometric shape of the interconnection element is modified.

22. (Twice Amended) An electronic component comprising:
a substrate with a plurality of contact nodes; and
a plurality of free-standing resilient interconnection elements coupled to the substrate in such a manner that a base of an interconnection element electrically contacts a corresponding one of the contact nodes and an interconnection element comprises:
a first element material adapted to be coupled to a substrate, and
a second different element material coupled to the first element material,
wherein one of the first element material and the second element material comprises a material having a transformable property such that upon transformation, a shape of the interconnection element is modified, wherein the one of the first element material and the second element material comprises a shape memory alloy.

48. (Three Times Amended) An assembly comprising:
a first substrate having a plurality of first contact nodes formed on the first substrate and a plurality of free-standing resilient interconnection elements coupled to the first substrate in such a manner that a base of an interconnection element electrically contacts a corresponding one of the first contact nodes; and
a second substrate having a plurality of second contact nodes,

wherein the interconnection element comprises:

a first element material adapted to be coupled to the first substrate, and
a second different element material coupled to the first element material,
and one of the first element material and the second element material comprises a
material having a transformable property such that upon transformation, a geometric
shape of the interconnection element is modified,

wherein the interconnection element has a portion thereof which is capable of
moving to a first position in which the interconnection element is in contact with one of
the plurality of second contact nodes.

76. (Three Times Amended) A system for contacting an electronic device including
an assembly comprising:

a first substrate having a plurality of first contact nodes formed on the first
substrate and a plurality of free-standing resilient interconnection elements coupled to
the first substrate in such a manner that a base of an interconnection element electrically
contacts a corresponding one of the first contact nodes; and

a second substrate having a plurality of second contact nodes,

wherein the interconnection element comprises:

a first element material adapted to be coupled to the first substrate, and
a second different element material coupled to the first element material,
and one of the first element material and the second element material comprises a
material having a transformable property such that upon transformation, a shape of
the interconnection element is irreversibly modified, wherein the one of the first
element material and the second element material comprises a shape memory alloy,
and

wherein the interconnection element has a portion thereof which is capable of
moving to a first position in which the interconnection element is in contact with one of
the plurality of second contact nodes.